

# Predicting the need for extrication in traffic accidents reported to 9-1-1.

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## Introduction

- Extrication activities with motor vehicle accidents (MVA) result in extended scene times, and increased morbidity and mortality.
- Identifying the need for extrication-capable resources during the 9-1-1 call-taking process, and dispatching them without delay, is crucial to delivering the required response and patient care.
- 9-1-1 calltakers in the study population utilize the Medical Priority Dispatch System (MPDS®) Protocols produced by Priority Dispatch (Salt Lake City, Utah, USA) to triage calls.
- Determining the need for extrication using this protocol currently relies on the 9-1-1 caller's answer to a single Key Question (KQ) in the Protocol: "Is anyone pinned (trapped)?"

## Objectives

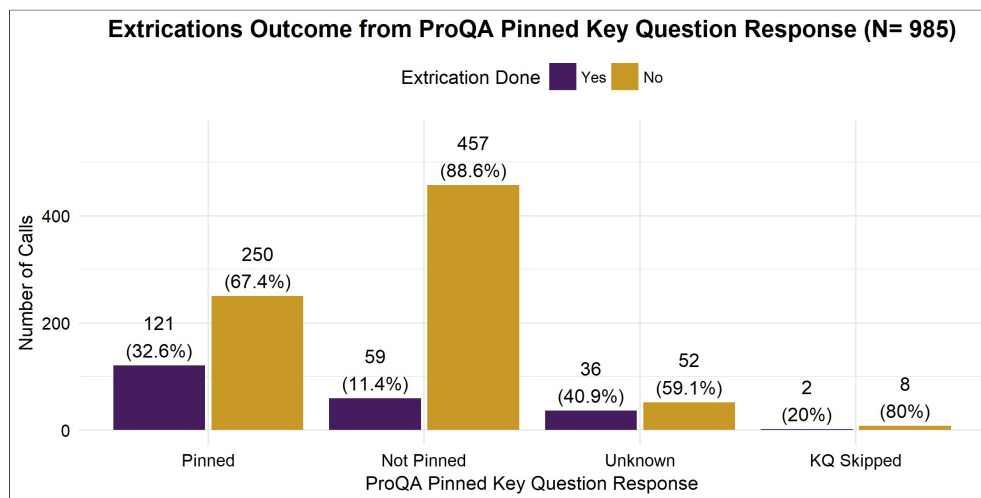
- The aims of this study were to determine the predictive ability of the "pinned (trapped)" KQ in the protocol for extrication, and compare this to the predictive ability of the presence a SEMI or Head-on collision.

## Methods and Materials

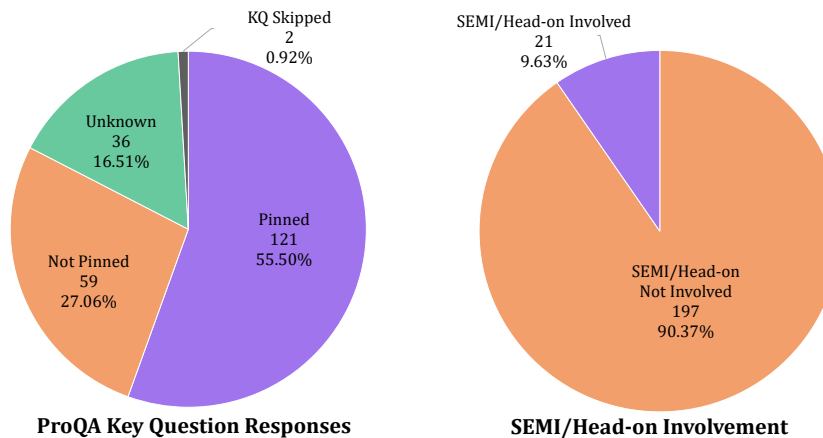
- This was a retrospective descriptive study of all MVA cases in three Kansas counties (Butler, Sedgwick, and Johnson), from January 1, 2016, through June 30, 2017.

## Results

A total of 985 (Butler: 255, Johnson: 410, and Sedgwick: 350) CAD and ProQA matched records were analysed, of which 218 (22.1%) required extrication and 267 (27.1%) involved semi/head-on—as documented by responders. Of the 267 semi/head-on involvement cases, 21 (7.9%) required extrication.



## Distribution of cases where Extrication was done (N= 218)



## Discussion

- The Protocol Key Question "Is anyone pinned (trapped)?" correctly identified about 56% of the accidents that required extrication (Sensitivity).
- In determining no extrication required, the Key Question was predictive 89% of the time (Specificity).
- Of the cases involving a SEMI or head-on collision reported here, less than 10% required extrication.
- Missing CAD and ProQA Data limited the strengths of our conclusions.

## Conclusion

- The protocol question "is anyone pinned (trapped)?" is a comparatively good predictor of extrication for traffic/transportation incidents.
- Further research should examine whether High Mechanism and Major Incident determinant suffixes will capture additional extrication incidents.

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